```
<110> Kwon, Byoung S.
<120> MURINE 4-1BB GENE
<130> 740.009US1
<140> US 08/012,269
<141> 1993-02-01
<150> US 07/922,996
<151> 1992-07-30
<150> US 07/267,572
<151> 1988-11-07
<160> 13
<170> FastSEQ for Windows Version 4.0
<210> 1
<211> 2350
<212> DNA
<213> Mus musculus
<220>
<221> misc feature
<222> (1) ... (2350)
<223> n = A, T, C \text{ or } G
<400> 1
atgtccatga actgctgagt ggataaacag cacgggatat ctctgtctaa aggaatatta
                                                                        60
ctacaccagg aaaaggacac attcqacaac aggaaaggag cctqtcacag aaaaccacag
                                                                       120
tgtcctgtgc atgtgacatt tcgccatggg aaacaactgt tacaacgtgg tggtcattgt
                                                                       180
gctgctgcta gtgggctgtg agaaggtggg agccgtgcag aactcctgtg ataactgtca
                                                                       240
gcctggtact ttctgcagaa aatacaatcc agtctgcaag agctgccctc caagtacctt
                                                                       300
ctccagcata ggtggacagc cgaactgtaa catctgcaga gtgtgtgcag gctatttcag
                                                                       360
gttcaagaag ttttgctcct ctacccacaa cgcggagtgt gagtgcattg aaggattcca
                                                                       420
ttgcttgggg ccacagtgca ccagatgtga aaaggactgc aggcctggcc aggagctaac
                                                                       480
gaagcagggt tgcaaaacct gtagcttggg aacatttaat gaccagaacg gtactggcgt
                                                                       540
ctgtcgaccc tggacgaact gctctctaga cggaaggtct gtgcttaaga ccgggaccac
                                                                       600
ggagaaggac gtggtgtgtg gacccctgt ggtgagcttc tctcccagta ccaccatttc
                                                                       660
tgtgactcca gagggaggac caggagggca ctccttgcag gtccttacct tgttcctggc
                                                                       720
gctgacatcg gctttgctgc tggccctgat cttcattact ctcctgttct ctgtgctcaa
                                                                       780
atggatcagg aaaaaattcc cccacatatt caagcaacca tttaagaaga ccactggagc
                                                                       840
agctcaagag gaagatgctt gtagctgccg atgtccacag gaagaagaag gaggaggagg
                                                                       900
aggetatgag etgtgatgta etateetagg agatgtgtgg geegaaaeeg agaageaeta
                                                                       960
ggaccccacc atcctgtgga acagcacaag caaccccacc accctgttct tacacatcat
                                                                      1020
cctagatgat gtgtgggcgc gcacctcatc caagtctctt ctaacgctaa catatttgtc
                                                                      1080
tttacctttt ttaaatcttt ttttaaattt aaattttatg tgtgtgagtg ttttgcctgc
                                                                      1140
ctgtatgcac acgtgtgtgt gtgtgtgtgt gtgacactcc tgatgcctga ggaggtcaga
                                                                      1200
agagaaaggg ttggttccat aagaactgga gttatggatg gctgtgagcc ggnnngatag
                                                                      1260
gtcgggacgg agacctgtct tcttatttta acgtgactgt ataataaaaa aaaaatgata
                                                                      1320
tttcgggaat tgtagagatt ctcctgacac ccttctagtt aatgatctaa gaggaattgt
                                                                      1380
tgatacgtag tatactgtat atgtgtatgt atatgtatat gtatatataa gactctttta
                                                                      1440
ctgtcaaagt caacctagag tgtctggtta ccaggtcaat tttattggac attttacgtc
                                                                      1500
acacacaca acacacacac ttatactacg tactgttatc ggtattctac
                                                                      1560
gtcatataat gggatagggt aaaaggaaac caaagagtga gtgatattat tgtggaggtg
                                                                      1620
```

```
1680
acagactacc ccttctgggt acgtagggac agacctcctt cggactgtct aaaactcccc
ttagaagtct cgtcaagttc ccggacgaag aggacagagg agacacagtc cgaaaagtta
                                                                     1740
tttttccggc aaatcctttc cctgtttcgt gacactccac cccttgtgga cacttgagtg
                                                                     1800
                                                                     1860
tcatccttgc gccggaaggt caggtggtac ccgtctgtag gggcggggag acagagccgc
gggggagcta cgagaatcga ctcacagggc gccccgggct tcgcaaatga aactttttta
                                                                     1920
atctcacaag tttcgtccgg gctcggcgga cctatggcgt cgatccttat taccttatcc
                                                                     1980
tggcgccaag ataaaacaac caaaagcctt gactccggta ctaattctcc ctgccggccc
                                                                     2040
ccgtaagcat aacgcggcga tctccacttt aagaacctgg ccgcgttctg cctggtctcg
                                                                     2100
ctttcgtaaa cggttcttac aaaagtaatt agttcttgct ttcagcctcc aagcttctgc
                                                                     2160
tagtctatgg cagcatcaag gctggtattt gctacggctg accgctacgc cgccgcaata
                                                                     2220
agggtactgg gcggcccgtc gaaggccctt tggtttcaga aacccaaggc cccctcata
                                                                     2280
ccaacgtttc gactttgatt cttgccggta cgtggtggtg ggtgccttag ctctttctcg
                                                                     2340
                                                                     2350
atagttagac
```

<210> 2

<211> 256

<212> PRT

<213> Mus musculus

<400> 2

```
Met Gly Asn Asn Cys Tyr Asn Val Val Ile Val Leu Leu Val
Gly Cys Glu Lys Val Gly Ala Val Gln Asn Ser Cys Asp Asn Cys Gln
                                25
Pro Gly Thr Phe Cys Arg Lys Tyr Asn Pro Val Cys Lys Ser Cys Pro
Pro Ser Thr Phe Ser Ser Ile Gly Gly Gln Pro Asn Cys Asn Ile Cys
                        55
Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Phe Cys Ser Ser Thr
                    70
                                        75
His Asn Ala Glu Cys Glu Cys Ile Glu Gly Phe His Cys Leu Gly Pro
Gln Cys Thr Arg Cys Glu Lys Asp Cys Arg Pro Gly Gln Glu Leu Thr
                                105
Lys Gln Gly Cys Lys Thr Cys Ser Leu Gly Thr Phe Asn Asp Gln Asn
                            120
Gly Thr Gly Val Cys Arg Pro Trp Thr Asn Cys Ser Leu Asp Gly Arg
                        135
Ser Val Leu Lys Thr Gly Thr Thr Glu Lys Asp Val Val Cys Gly Pro
                    150
                                        155
Pro Val Val Ser Phe Ser Pro Ser Thr Thr Ile Ser Val Thr Pro Glu
                                    170
Gly Gly Pro Gly Gly His Ser Leu Gln Val Leu Thr Leu Phe Leu Ala
                                185
Leu Thr Ser Ala Leu Leu Leu Ala Leu Ile Phe Ile Thr Leu Leu Phe
                            200
Ser Val Leu Lys Trp Ile Arg Lys Lys Phe Pro His Ile Phe Lys Gln
                        215
                                            220
Pro Phe Lys Lys Thr Thr Gly Ala Ala Gln Glu Glu Asp Ala Cys Ser
                                        235
Cys Arg Cys Pro Gln Glu Glu Glu Gly Gly Gly Gly Tyr Glu Leu
                                    250
                245
```

<sup>&</sup>lt;210> 3

<sup>&</sup>lt;211> 24

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Mus musculus

```
<400> 3
Cys Arg Val Cys Ala Gly Tyr Phe Arg Phe Lys Lys Phe Cys Ser Ser
                                     10
Thr His Asn Ala Glu Cys Glu Cys
            20
<210> 4
<211> 22
<212> PRT
<213> Drosophila
<400> 4
Cys Pro Val Cys Phe Asp Tyr Val Ile Leu Gln Cys Ser Ser Gly His
Leu Val Cys Val Ser Cys
            20
<210> 5
<211> 26
<212> PRT
<213> Dictyostelium
<400> 5
Cys Pro Ile Cys Phe Glu Phe Ile Tyr Lys Lys Gln Ile Tyr Gln Cys
Lys Ser Gly His His Ala Cys Lys Glu Cys
            20
<210> 6
<211> 6
<212> PRT
<213> Mus musculus
<220>
<221> SITE
<222> (1)...(6)
<223> Xaa = Any Amino Acid
<400> 6
Val Gln Asn Ser Xaa Asp
<210> 7
<211> 12
<212> PRT
<213> Artificial Sequence
<223> An artificial peptide
<400> 7
Cys Arg Pro Gly Gln Glu Leu Thr Lys Ser Gly Tyr
<210> 8
<211> 24
<212> PRT
<213> Artificial Sequence
```

<400> 12

```
<220>
 <223> A conserved pattern
 <221> SITE
 <222> (1) ... (24)
 <223> Xaa = Any Amino Acid
 <400> 8
 Xaa His Xaa Xaa Xaa Cys Xaa Cys
 <210> 9
 <211> 4
 <212> PRT
 <213> Mus musculus
 <400> 9
 Cys Arg Cys Pro
 1
 <210> 10
 <211> 4
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> A consensus sequence
 <221> SITE
 <222> (1) ... (4)
 <223> Xaa = Any Amino Acid
 <400> 10
 Cys Xaa Cys Pro
<210> 11
 <211> 25
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> A primer
 <400> 11
                                                                   25
 acctcgaggt cctgtgcatg tgaca
 <210> 12
 <211> 25
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> A primer
```

<210> 13
<211> 11
<212> PRT
<213> Mus musculus
<400> 13
Cys Arg Pro Gly Gln Glu Leu Thr Lys Gln Gly